No. 76TQ002

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Nebraska Agricultural Experiment Station

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF seventeen YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW,*[THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM,] TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS REQUIRED BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

*[Waived]

WHEAT

'Lancota'

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the* Plant Variety Protection Office *to be affixed at the City of* Washington *this* 11th *day of* April *in the year of our Lord one thousand nine hundred and* seventy-seven

PLANT VARIETY PROTECTION OFFICE · U.S. DEPARTMENT OF AGRICULTURE

Attest:

Commissioner
Plant Variety Protection Office
Grain Division
Agricultural Marketing Service

Secretary of Agriculture

FORM GR-470 (1-76)

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
GRAIN DIVISION
PLANT VARIETY PROTECTION OFFICE
NATIONAL AGRICULTURAL LIBRARY
BELTSVILLE, MARYLAND 20705

FORM APPROVED OMB NO. 40-R3712

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

INSTRUCTIONS: *See Reverse.*

1a. TEMPORARY DESIGNATION OF VARIETY	1b. VARIETY NAME	FOR OFFICIAL USE ONLY
NE701132	Lancota (C.I. 17389)	PV NUMBER 76TQ002
2. KIND NAME: Hard Red Winter Wheat	3. GENUS AND SPECIES NAME: Triticum aestivum L.	FILING DATE 6·11·76 / TIME 8 A.M.
4. FAMILY NAME (BOTANICAL): Gramineae	5. DATE OF DETERMINATION: July, 1970	FEE RECEIVED $250.00 $250.00 $250.00 / DATE — — —

6. NAME OF APPLICANT(S)	7. ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code)	8. TELEPHONE AREA CODE AND NUMBER
Board of Regents, University of Nebraska and Agricultural Research Service U.S. Department of Agriculture	Lincoln, Nebraska 68583 Washington, DC 20250	402-472-2811 202-447-3656

9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: (Corporation, partnership, association, etc.)	10. IF INCORPORATED, GIVE STATE AND DATE OF INCORPORATION	11. DATE OF INCORPORATION
Corporation and U.S. Government Agency	Nebraska and Washington	

12. Name and mailing address of applicant representative(s), if any, to serve in this application and receive all papers:

Dr. Howard W. Ottoson, Director
Agricultural Experiment Station
University of Nebraska-Lincoln
Lincoln, NE 68583

Dr. T. W. Edminster
Office of the Administrator
Agricultural Research Service, USDA
Washington, DC 20250

13. CHECK BOX BELOW FOR EACH ATTACHMENT SUBMITTED:

- [X] 13A. Exhibit A, Origin and Breeding History of the Variety *(See Section 52 of the Plant Variety Protection Act.)*
- [X] 13B. Exhibit B, Novelty Statement.
- [X] 13C. Exhibit C, Objective Description of the Variety *(Request form from Plant Variety Protection Office.)*
- [X] 13D. Exhibit D, Additional Description of the Variety.

14A. Does the applicant(s) specify that seed of this variety be sold by variety name only as a class of certified seed? *(See Section 83(a). (If "Yes," answer 14B and 14C below.)* [X] YES [ ] NO

14B. Does the applicant(s) specify that this variety be limited as to number of generations? [X] YES [ ] NO

14C. If "Yes," to 14B, how many generations of production beyond breeder seed? [X] FOUNDATION [X] REGISTERED [X] CERTIFIED

15. Does the applicant(s) agree to the publication of his/her (their) name(s) and address in the Official Journal? [XX] YES [ ] NO

16. The applicant(s) declare(s) that a viable sample of basic seed of this variety will be deposited upon request before issuance of a certificate and will be replenished periodically in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

For the Board of Regents - Univ. of Nebraska

May 21, 1976
(DATE)

(SIGNATURE OF APPLICANT)

JUN 30 1976
(DATE)

Miles Tommerasen, Vice Chancellor for Business & Finance
(SIGNATURE OF APPLICANT)

Ralph J. McCracken
Acting Administrator

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76 TQ-2

EXHIBIT A

Origin and Breeding History of Lancota

Pedigree: Atlas 66/Comanche//Lancer

Date of Cross: Cross 651014, 1965

Place: Agronomy Department, Nebraska Agricultural Experiment Station, Lincoln, Nebraska

The breeding history of Lancota is summarized in Table 1. The decision to release Atlas 66/Comanche//Lancer, Nebr. Sel. 701132 (C.I. 17389), under the name of Lancota was made in December 13, 1974, by the Nebraska Agricultural Experiment Station. Public release of information on Lancota as a variety occurred on June 15, 1975.* The North Central Region, Agricultural Research Service, U.S. Department of Agriculture, and the Kansas, South Dakota, and Texas Agricultural Experiment Stations joined the Nebraska Agricultural Experiment Station in the release of Lancota.

Breeder seed of NE701132 was seeded in the fall of 1974 for the production of foundation seed. Ten bushels of breeder seed was supplied to the Kansas Agricultural Experiment Station.

In 1975, the Nebraska Foundation Seed Division produced 3555 bushels of foundation seed. and 136 bushels of breeder seed. The foundation seed was allocated to Nebraska growers for the production of registered seed in 1976 and the breeder seed was used for production of foundation seed in 1976.

Lancota appears to be as stable genetically as Lancer. Frequency of recognizable variants would be less than 0.1% even though Lancota was selected in the F_2 generation.

* Release statement attached

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Table 1. Breeding history of Lancota hard red winter wheat.

Year	Generation	Nursery	Disposition
1965	F_0	Cross 651014 made in the greenhouse at Lincoln, NE	Seeded in the fall of 1965 at Lincoln, NE
1966	F_1	Greenhouse	Advanced to F_2 nursery
1967	F_2	F_2 bulk hybrid row 1634, Mead, NE	200 heads selected and advanced to Lincoln head-row nursery
1968	F_3	Lincoln headrow 20061	Row harvested and advanced to Mead preliminary observation nursery
1969	F_4	Mead preliminary observation nursery row 4412	Line harvested and advanced to observation nursery at Mead.
1970	F_5	Mead observation nursery, plot 1132	Plot 1132 recognized as having merit: harvested and Nebr. Sel. No. 701132 assigned. Advanced to yield trials.
1971	F_6	Triplicate nursery at Nebraska stations	Continued in Nebraska tests.
1972	F_7	Triplicate nursery and Nebraska Outstate Tests	To Nebraska Intrastate Nursery, Southern Regional Performance Nursery, large scale milling and baking tests.
1973	F_8	Nebraska Intrastate Nursery, Outstate Tests, SRPN, large-scale milling and baking tests, winter-hardiness tests, soil-borne mosaic virus tests.	Continued in same tests, breeder seed increase.
1974	F_9	Continued in most of the above tests	Continued in most tests for 1975. Large scale seed increases.
1975	F_{10}	Released as Lancota	Foundation seed to registered seed growers.

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NEBRASKA AGRICULTURAL EXPERIMENT STATION
UNIVERSITY OF NEBRASKA-LINCOLN
LINCOLN, NEBRASKA

and

SOUTH DAKOTA AGRICULTURAL EXPERIMENT STATION
SOUTH DAKOTA STATE UNIVERSITY
BROOKINGS, SOUTH DAKOTA

and

TEXAS AGRICULTURAL EXPERIMENT STATION
TEXAS A & M UNIVERSITY
COLLEGE STATION, TEXAS

and

KANSAS AGRICULTURAL EXPERIMENT STATION
KANSAS STATE UNIVERSITY
MANHATTAN, KANSAS

and

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL RESEARCH SERVICE
NORTH CENTRAL REGION
WASHINGTON, D. C.

RELEASE OF 'LANCOTA' (C.I. 17389) HARD RED WINTER WHEAT

The Nebraska Agricultural Experiment Station, the South Dakota Agricultural Experiment Station, the Texas Agricultural Experiment Station, the Kansas Agricultural Experiment Station, and the North Central Region, Agricultural Research Service, U. S. Department of Agriculture agree to release a new hard red winter wheat to Certified seed growers. C.I. 17389, also known as Nebraska selection 701132, will be released as 'Lancota'. It was developed cooperatively by the Nebraska Agricultural Experiment Station and the North Central Region, Agricultural Research Service, U. S. Department of Agriculture.

Lancota is a single F_2-derived selection from the cross, Atlas 66/Comanche//Lancer made at Lincoln, Nebraska in 1965. It was entered in yield trials as NE701132 in 1971 and in the Southern Regional Performance Nursery in 1972.

Lancota is a hard red winter wheat that is similar to Lancer in field appearance. Like Lancer it is medium in maturity, awned and white glumed. It is similar to Lancer in height but has somewhat better straw strength. It has been consistently superior to Lancer in yield and in 1000-kernel weight and equal or better in bushel weight. Lancota is similar to Lancer in stem-rust reaction but much superior to Lancer in resistance to leaf rust and Septoria

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EXHIBIT B

Data Indicative of Novelty of Lancota

The Lancota variety is more similar to Lancer than to other varieties in field appearance. It differs from Lancer somewhat in spike type. The Lancota spike is somewhat oblong and does not taper so much as the Lancer spike. Lancer is susceptible to leaf rust while Lancota is moderately resistant. They are similar in adult plant stem rust resistance.

Kernels of Lancota have a heavier 1000-kernel weight as shown below (data from 1973-75 Nebraska Outstate Tests):

	1973	1974	1975
	(1000-kernel wt., gms.)		
Lancer	24.1	29.0	27.8
Lancota	27.0	31.7	31.4

Both have elliptical, red kernels.

Lancota also differs from Lancer in grain protein content as shown below (1973-75 Nebraska Outstate Tests):

	1973	1974	1975
	(Grain protein content, %)		
Lancer	11.7	11.5	12.9
Lancota	13.3	13.1	13.7

This increase in protein content was the major factor in the release of Lancota. However, other Nebraska varieties such as Homestead, Sentinel, Scoutland and Sage often have grain protein content approaching that of Lancota.

Lancota can be described as:

a. An awned, hard red winter wheat.
b. Moderately resistent to current stem rust races (Tables 2, 3 & 4).
c. Moderately resistant to current races of leaf rust (Tables 2 & 4).
d. Intermediate in reaction to soil-borne mosaic virus (Table 5).
e. Above average in grain protein content (data shown above).
f. Medium in dough handling properties (Table 6, Figures 1 & 2).

FORM APPROVED. OMB NO. 40-R3712

FORM GR-470-6 (10-16-72)

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
GRAIN DIVISION
HYATTSVILLE, MARYLAND 20782

EXHIBIT C (Wheat)

OBJECTIVE DESCRIPTION OF VARIETY

WHEAT (*TRITICUM SPP.*)

INSTRUCTIONS: *See Reverse.*

NAME OF APPLICANT(S): Board of Regents, University of Nebraska and Agricultural Research Service, U.S. Dept. of Agr.

ADDRESS (*Street and No. or R.F.D. No., City, State, and ZIP Code*): Lincoln, NE 68583 - Washington, DC 20250

FOR OFFICIAL USE ONLY

PVPO NUMBER: 76TQ002

VARIETY NAME OR TEMPORARY DESIGNATION: Lancota

Place the appropriate number that describes the varietal character of this variety in the boxes below.
Place a zero in first box (e.g. [0][8][9] or [0][9]) when number is either 99 or less or 9 or less.

1. KIND:

[1] 1 = COMMON 2 = DURUM 3 = EMMER 4 = SPELT 5 = POLISH 6 = POULARD 7 = CLUB

2. TYPE:

[2] 1 = SPRING 2 = WINTER 3 = OTHER (*Specify*) _____ [2] 1 = SOFT 2 = HARD 3 = OTHER (*Specify*) _____

[2] 1 = WHITE 2 = RED 3 = OTHER (*Specify*) _____

3. SEASON - NUMBER OF DAYS FROM EMERGENCE TO: not applicable

[ ][ ][ ] FIRST FLOWERING [ ][ ][ ] LAST FLOWERING

4. MATURITY (*50% Flowering*):

[ ][ ] NO. OF DAYS *EARLIER* THAN ..... [ ] 1 = ARTHUR 2 = SCOUT 3 = CHRIS

[0][3] NO. OF DAYS *LATER* THAN ..... [2] 4 = LEMHI 5 = NUGAINES 6 = LEEDS

5. PLANT HEIGHT (*From soil level to top of head*):

[ ][9][5] CM. HIGH

[0][0] CM. TALLER THAN ..... [2] 1 = ARTHUR 2 = SCOUT 3 = CHRIS

[ ][ ] CM. SHORTER THAN ..... [ ] 4 = LEMHI 5 = NUGAINES 6 = LEEDS

6. PLANT COLOR AT BOOTING (*See reverse*):

[3] 1 = YELLOW GREEN 2 = GREEN 3 = BLUE GREEN

7. ANTHER COLOR:

[1] 1 = YELLOW 2 = PURPLE

8. STEM:

[1] Anthocyanin: 1 = ABSENT 2 = PRESENT

[2] Waxy bloom: 1 = ABSENT 2 = PRESENT

[1] Hairiness of last internode of rachis: 1 = ABSENT 2 = PRESENT

[1] Internodes: 1 = HOLLOW 2 = SOLID

[0][5] NO. OF NODES (*Originating from node above ground*)

[4][3] CM. INTERNODE LENGTH BETWEEN FLAG LEAF AND LEAF BELOW to be supplied RE

9. AURICLES:

[1] Anthocyanin: 1 = ABSENT 2 = PRESENT

[1] Hairiness: 1 = ABSENT 2 = PRESENT

10. LEAF:

[2] Flag leaf at booting stage: 1 = ERECT 2 = RECURVED 3 = OTHER (*Specify*): _____

[1] Flag leaf: 1 = NOT TWISTED 2 = TWISTED

[1] Hairs of first leaf sheath: 1 = ABSENT 2 = PRESENT

[2] Waxy bloom of flag leaf sheath: 1 = ABSENT 2 = PRESENT

[1][2] MM. LEAF WIDTH (*First leaf below flag leaf*) to be supplied RE

[2][9] CM. LEAF LENGTH (*First leaf below flag leaf*): to be supplied RE

Sold of march 3, 1977

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Table 2.-- Concluded.

C. I. or Sel. No.	Septoria Nodorum	Septoria Tritici	SBMV	Bunt	Mildew	Streak Yellowing	Streak Dwarfing	Scab	Freeze Damage	Forage Rating	Pearling	Test Weight	Yield
	0-9	0-9	0-9	0-9	0-9	1-9	1-9	0-9	0-9	1-9	%	kg/hl	kg/ha
Number of trials	1	1	1	1	1	1	1	1	1	1	1	24	24
CO725052	3	4	8	6	1	5	3	0	3	5	29	78.1	3087
NE701132**Lancota**3		2	7	7	1	3	3	1	1	4	33	77.1	2977
CO705055	4	4	8	6	1	5	3	1	0	4	32	78.2	2923
CI15075	2	2	8	4	-	6	3	4	3	5	28	76.6 2/	2901
TX69A509-1	5	4	8	6	4	7	7	4	3	2	28	76.5	2900
KS70H179	3	3	8	6	1	5	4	0	0	5	31	77.2	2884
OK66V2629	4	3	8	2	-	7	3	1	0	5	34	76.9 2/	2871
TX71A801	4	4	8	6	1	6	5	1	2	2	23	76.3	2865
TX69A450-1	3	2	8	5	2	4	3	5	0	8	26	75.9	2845
OK66V2621	4	4	8	5	1	6	4	0	0	6	33	76.8	2820
KS70H210	3	3	8	7	2	6	3	0	1	7	30	77.2	2809
KS70H208	3	3	8	5	2	7	4	1	1	6	30	77.0	2775
OK66V2619	4	4	8	-	2	6	3	1	0	7	31	76.8	2773
TX69A460-1	5	4	8	6	3	8	6	1	1	3	24	76.0	2703
Funk 7173	2	2	7	5	3	3	6	0	0	3	25	76.7 1/	2700
CI13996	4	4	8	6	2	6	3	1	1	3	34	77.1	2655
TX69A345-2	4	4	8	6	1	5	2	5	0	7	37	75.7	2556
TX69A330-1	4	4	8	6	2	6	3	2	0	6	30	76.0	2551
CI17262	2	2	8	5	1	5	8	1	0	7	26	76.6	2546
Funk 7174	3	4	8	6	1	5	6	1	3	3	27	72.3	2486
Funk 7166	4	4	8	5	3	4	4	1	2	8	28	76.4	2413
NM62-124	5	3	8	6	6	5	8	2	2	5	32	74.6	2407
CI 1442	2	3	8	6	2	5	4	0	1	5	33	74.1 1/	1893

1/ Average based on 1 trial less than the number shown.

2/ Average based on 2 trials less than the number shown.

Table 3. Seedling Reactions of the 1974 Southern Regional Hard Red Winter Wheat Performance Nursery to *Puccinia graminis* F. sp. *tritici*. (by D. V. McVey, Cereal Rust Laboratory, ARS, University of Minnesota, St. Paul, MN)

Entry No.	Variety or Cross	C. I. No. or Sel. No.	Source	Reaction Produced by Isolates												
				72-45-855C	70-44-64A	72-45-1079B	72-21-1184B	65-39-2	72-4-1A	72-14-504C	72-00-53A	71-21-584B	72-25-639C	72-44-703C	72-00-1370C	72-11-486B
				MBC*	HFC	HJC	TBM	TLM	TNM	RPL	RTQ	RHR	RKQ	QSH	QFB	QTH
				56	17		15	15B2		11-32-113				151		
1	Kharkof	1442	check	S	R	R	S	S	S	R	R	S	R	I	R	I
2	Scout 66	13996	check	S	S	S	R	R	R,S	R	R	S	S	R	I	I
3	Sage (CI17277)	KS70H179	Kansas	R	R	R	R	R	R	R	R	R	R	R	R	R
4	Short Wheat/Sct. Comp.	TX69A330-1	Texas	S	S	S	S	S	S	S	S	S	S	R	R	S
5	do.	TX69A460-1	"	S	S	S	R	R	R	R	R	S	R	R	R	S
6	do.	TX69A509-1	"	S	S	S	S	S	S	S	S	S	R	R	R	I
7	do.	TX69A456-1	"	S	S	S	I	R	I	R	R	R	R	S	I	S
8	do.	TX69A345-2	"	S	S	S	R	R	R	R	R	S	R	I	R	S
9	62A2712/Centurk	TX71A801	"	S	R	R	R,S	S	S,R	S,R	S,R	I	R	R	R	-
10	Ottawa/5*Scout	KS70H208	Kansas	R	S	S	R	R	R	R	R	S	S	R	I	I
11	do.	KS70H210	"	R	S	S	R	R	R	R	R	S	R	R	I	I
12	II21183/2643/Lcr/3/KS62136	CO725055	Colorado	R	R,S	R	R	R	R	R	R	I	R	R	R	I
13	do.	CO725052	"	R	R	R	R	R	R	R	R	I	R	R	R	R
14	Nrn16/CI 12500//Bsn	NM62-124	N.Mexico	R	S	S	S	S	S	S	S	S	S	R	R	R
15	Composite Cross	Funk 7166	Funk Seeds	S	S	S	S	S	S	S	S	S	S	S	R	S
16	do.	Funk 7173	"	R	S	S	S	-	S	S	S	-	-	-	-	-
17	do.	Funk 7174	"	R	S	S	S	S	S	S	S	S	S	S	I	S
18A	Atlas 66/Cmm//Lcr Lancota	NE701132	Nebraska	R	R	S	R	R	R	R	R	S	R	S	R	S
19	Scout Selection	OK66V2621	Oklahoma	S	S	S	R	R	R	R	R	S	S	S	I	I
20	do.	OK66V2629	"	S	S	S	R	R	R	R	R	S	S	S	I	S
21	do.	OK66V2619	"	I	S	S	R	R	R	R	R	S	S	S	I	I
22	HiPlains	17262	Nebraska		R	R	R	R	R	R	R	R	R	R	R	R
23	Centurk	15075	"	R	R	R	R	R	R	R	R	R	R	S	R	S

* Cereal Rust Laboratory designation based upon 12 isogenic lines.

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Table 4. Adult plant reactions of the 1974 Southern Regional Hard Red Winter Wheat Performance Nursery to stem rust, leaf rust, and powdery mildew grown at St. Paul, MN (by D. V. McVey, Cereal Rust Laboratory).

Variety or Line	Stem Rust			Leaf Rust		% powdery mildew
	6/25	7/03	7/08	6/25	7/03	
1. Kharkof	40	80	80	20S	60S	60
2 Scout 66	TR	10MS-S	40MS-S	10S	60S	40
3 Sage	0	0	TR	0	TS	40
4 TX 69A330-1	40S	80S	80S	20S	80S	80
5 TX 69A460-1	0	5R	60S	0	10S	10
6 TX 69A509-1	TMS	60S	80S	TMS	40S	80
7 TX 69A450-1	TR	5MS-S	60S	0	TS	10
8 TX 69A345-2	0	20S	80S	10S	60S	90
9 TX 71A801	60S	100S	-	10S	60S	90
10 KS 70H208	0	TR	20MS-S	20S	80S	60
11 KS 70H210	0	5R-MR	20MS-S	20S	80S	40
12 CO 725055	TMR	20S	40S	20S	80S	80
13 CO 725052	TR	5R-MR	20MS	TS	20S	60
14 NM 62-124	40S	80S	80S	TS	20S	60
15 Funk 7166	60S	100S	-	60S	80S	80
16 Funk 7173	70MS-S	60S	80S	5S	40S	90
17 Funk 7174	40S	90S	90S	20S	60S	90
18 NE 701132 Lancota	10MR	40S	60S	TMS	10S	60
19 OK 66V2621	0	TR	5MS-S	20S	60S	40
20 OK 66V2629	0	TR	5MS-S	10S	60S	60
21 OK 66V2619	0	TR	5MS-S	5S	60S	60
22 HiPlains	TR	5S	5S	20S	60S	40
23 Centurk	10MS-S	60S	60S	5S	60S	60

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Table 5. Field Infection Data.
1973
Winter Wheat Regional
Soil-borne Mosaic Nursery

Entry No.		Kansas Newton Reaction[1]	Kansas Powhattan Reaction[1]	Urbana, Illinois Incidence %	Urbana, Illinois Severity[2] (0 - 10)
1	Pawnee	S	MS	45	8
2		R-	R-	0	0
3		R	R-	0	0
4		R	R-	0	0
5		R	R	0	0
6		R	R-	20	1
7		MR	MR-	5	1
8		R-	R-	60	4
9		R	MR	25	1
10		R	R	0	0
11		MR	MR-	0	0
12		R	MR-	0	0
13		MR	MR-	10	8
14		R	R-	5	2
15		MR	MS	0	0
16		MR	MS	0	0
17		R	R	40	2
18		R	R	0	0
19		R	R	60	3
20		S	S	15	2(10%R)
21		MR	MS	40	2
22		MS	MS-	20	2
23		R	R	0	0
24		R	R-	0	0
25		S	S	50	8
26		MS-	S	60	8
27		S	S	20	4
28		R-	S	5	3
29		MS	M	0	0
30		S	S	60	8
31		S	S	50	6
32		S	S	55	7
33		S	S	100	3
34		S	S	25	4
35	Buckskin	MR-	S	10	5
36	Homestead	R	R	0	0
37	Sentinel	MS-	S	30	7
38	HiPlains	MS	S	0	0

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Table 5. (concluded)
1973
Winter Wheat Regional Soil-borne Mosaic Nursery (concluded)

Entry No.		Kansas Newton Reaction[1]	Kansas Powhattan Reaction[1]	Urbana, Illinois Incidence %	Urbana, Illinois Severity[2] (0 - 10)
39		MS	S	50	6
40	Concho	R	R	0	0
41	Lancota	MS	Seg	0	0
42		MS	Seg	25	4
43		MS	Seg	25	5
44		MS	Seg	50	6
45		MS	MS⁻	15	6
46		MS	MS⁻	80	7
47		MR⁻	MS⁻	20	4
48		MR⁻	MS	10	5
49		MS	MR	0	0
50		S	S	10	1(30%R)
51		MS	MS⁻	0	0
52		MR⁻	MS⁻	0	0
53		MS	S	0	0
54		MS	S	0	0
55		S	S	20	5
56		S	S	25	4
57		S	S	100	10
58		MR⁻	MS	10	3
59		S	S	20	7
60		S	S	50	8
61		S	S	90	7
62		R	R	0	0

1/
R = only a few plants with symptoms, no yellowing, no stunting.

MR = a number of plants with symptoms, no yellowing, no stunting.

MS = nearly all plants with symptoms, generally no yellowing or stunting.

S = all plants with symptoms, yellowing, and often stunting.

Seg = evident healthy plants in the row, virus susceptible, sometimes confused with MS.

+or - deviates from the four major classes.

2/ 0 - no visible symptoms
10 - intolerant
R - indicates rosetting

Table 6. Chemical, Milling, and Baking Data for the Southern Regional Performance Nursery Composites of Hard Winter Wheat Varieties Harvested in Texas, Oklahoma, Kansas, Missouri, Nebraska, and Colorado in 1974. 1/

Variety	C.I. or Sel. No.	Wheat 2/				Flour 2/		Bread-baking Data 2/					
									Mixing Time 3/			Loaf Volume	
		Wt. Per Bu.	Ash	Protein	Flour Yield	Ash	Protein	Absorption	As Rec'd	Corrected To 12.0% P	Crumb Grain	As Rec'd	Corrected To 12.0% P
		lbs.	%	%	%	%	%	%	min.	min.		cc.	cc.
Kharkof	1442	58.8	1.63	13.7	74.9	.48	12.8	64.5	3	-	S	989	933
Scout 66	13996	60.6	1.50	12.9	75.2	.47	12.0	63.6	3 3/8	-	S	933	933
Centurk	15075	60.6	1.56	12.8	72.7	.48	11.9	66.7	5 3/4	-	S	922	929
Hi Plains	17262	60.5	1.59	12.9	74.6	.46	12.1	64.2	4 3/8	-	S	968	961
Sage	17277	60.7	1.55	13.2	73.8	.45	12.3	66.2	3 7/8	-	S	933	913
Short Wheat/Sut Comp.	TX69A330-1	60.5	1.48	12.2	74.9	.43	11.4	60.8	2 3/4	2 1/2 Q	S	915	959
" "	TX69A345-2	59.6	1.60	13.6	75.1	.43	12.7	61.2	2 3/8 Q	-	S	978	929
" "	TX69A450-1	60.0	1.56	13.4	75.6	.48	12.6	67.6	4 3/8	-	S	948	908 5/
" "	TX69A460-1	60.2	1.59	13.5	73.9	.44	12.3	68.2	3 1/8	-	S	1013	990 5/
" "	TX69A509-1	60.4	1.49	12.8	73.3	.42	11.8	64.3	3 1/8	3	S	930	944 5/
62A2712-7/Centurk	TX71A801	60.1	1.45	12.5	72.8	.43	11.3	67.4	4 1/8	3 3/4	S	937	991 5/
Nrn 16/C.I. 12500/ 2/Bison	NM62-124	59.3	1.51	12.2	73.2 4/	.44	11.3	63.5	2 1/2 Q	2 1/4 Q	S	888	938
Scout Sel.	OK66V2619	60.5	1.50	12.6	75.0	.45	11.9	64.2	3 5/8	-	S	925	932 5/
"	OK66V2621	60.5	1.46	12.6	75.0	.45	12.0	64.0	3 3/4	-	S	938	938 5/
"	OK66V2629	60.8	1.49	12.6	75.5	.41	11.8	63.4	3	2 7/8	S	931	945

Table 6. (cont.), page 2

Variety	C.I. or Sel. No.	Wheat[2/] Wt. Per Bu.	Wheat[2/] Ash	Wheat[2/] Protein	Wheat[2/] Flour Yield	Flour[2/] Ash	Flour[2/] Protein	Bread-baking Data[2/] Absorption	Mixing Time[3/] As Rec'd	Mixing Time[3/] Corrected To 12.0% P	Crumb Grain	Loaf Volume As Rec'd	Loaf Volume Corrected To 12.0% P
		lbs.	%	%	%	%	%	%	min.	min.		cc.	cc.
Ottawa/5 Scout	KS70H208	60.5	1.48	13.1	74.5	.45	12.1	66.1	3 1/6	-	S	955	948
" "	KS70H210	60.3	1.47	12.6	74.0	.44	11.8	64.5	3 1/4	3 1/8	S	945	960 5/
Lancota	NE701132	60.3	1.53	13.8	74.6 4/	.43	13.1	65.6	2 7/8	-	S	1048	967 6/
II 21183/2643/Lcr/ 3/KS62	CO725052	61.5	1.53	12.4	73.0	.39	11.2	63.7	4 3/8	4 1/8	S	925	986 5/
" "	CO725055	61.6	1.54	12.6	73.6	.37	11.6	63.9	4 1/4	4 1/4	S	952	982 5/
Composite Cross	Funk 7166	61.0	1.58	12.5	74.7	.39	11.5	62.9	3 3/8	3 1/8	S	910	946 5/
" "	Funk 7173	61.2	1.76	13.3	73.0	.48	12.1	66.2	5 7/8	-	S	963	956 5/
" "	Funk 7174	58.3	1.70	12.9	72.5	.44	11.9	63.2	3	-	S	962	969 5/

1/ Chemical data expressed on a 14% moisture basis.

2/ S, Q, and U - Satisfactory, questionable, and unsatisfactory quality with respect to property in question. A satisfactory rating is inferred in the absence of a designated one. One unsatisfactory rating, in general, characterizes a variety as undesirable for hard wheat milling and breadmaking purposes. Crumb colors were satisfactory for all entries.

3/ Mixing time used in baking is evaluated in conjunction with other mixing properties obtained from the mixogram.

4/ Softer than average hard wheat milling properties but entirely satisfactory.

5/ Promising overall quality characteristics.

6/ Particularly promising overall quality characteristics.

76TQ-2

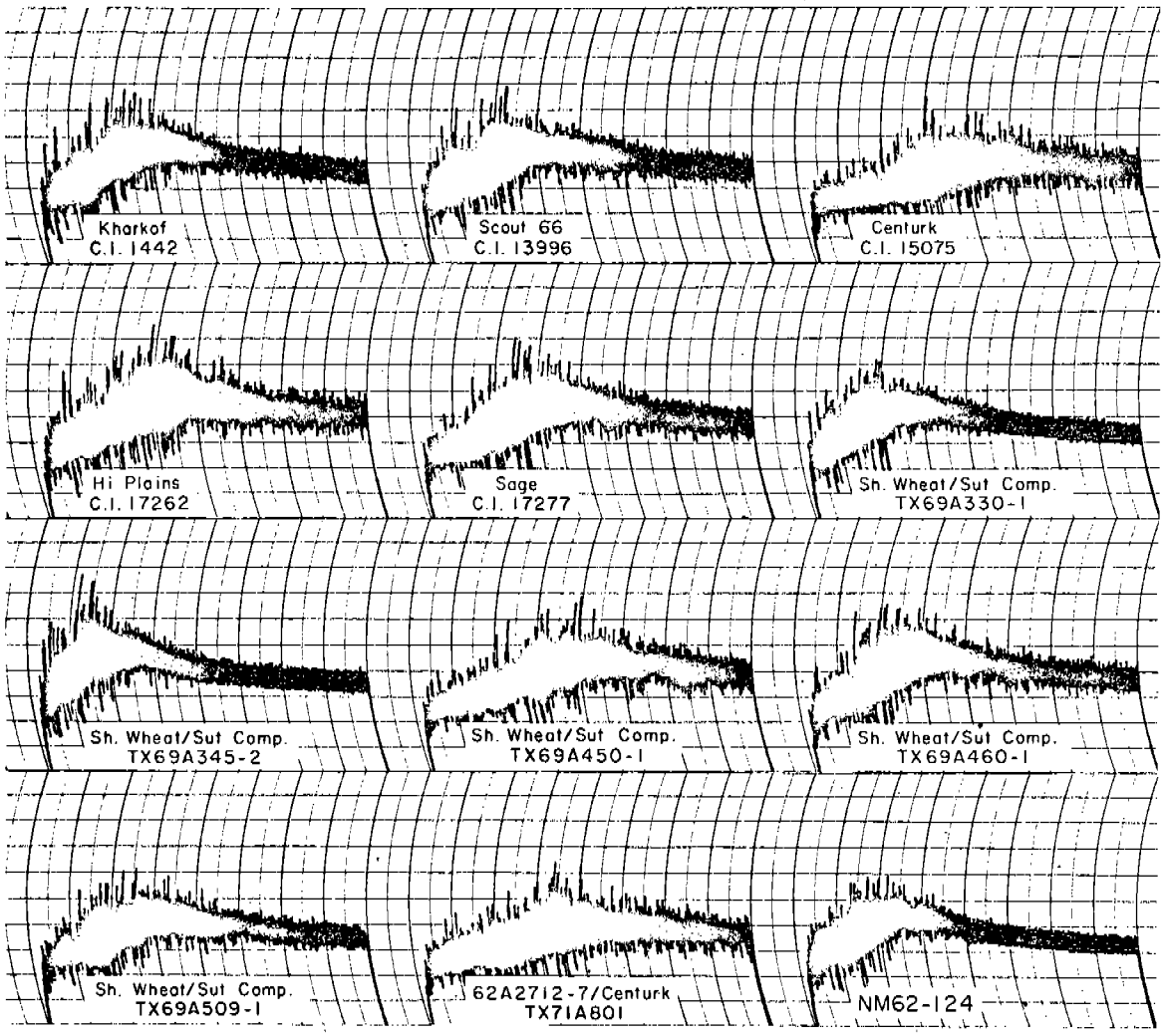


Fig. 1. Mixograms (10-g.) for the Southern Regional Performance Nursery composites of hard winter wheat varieties harvested in Texas, Oklahoma, Kansas, Missouri, Nebraska, and Colorado in 1974.

76TQ-2

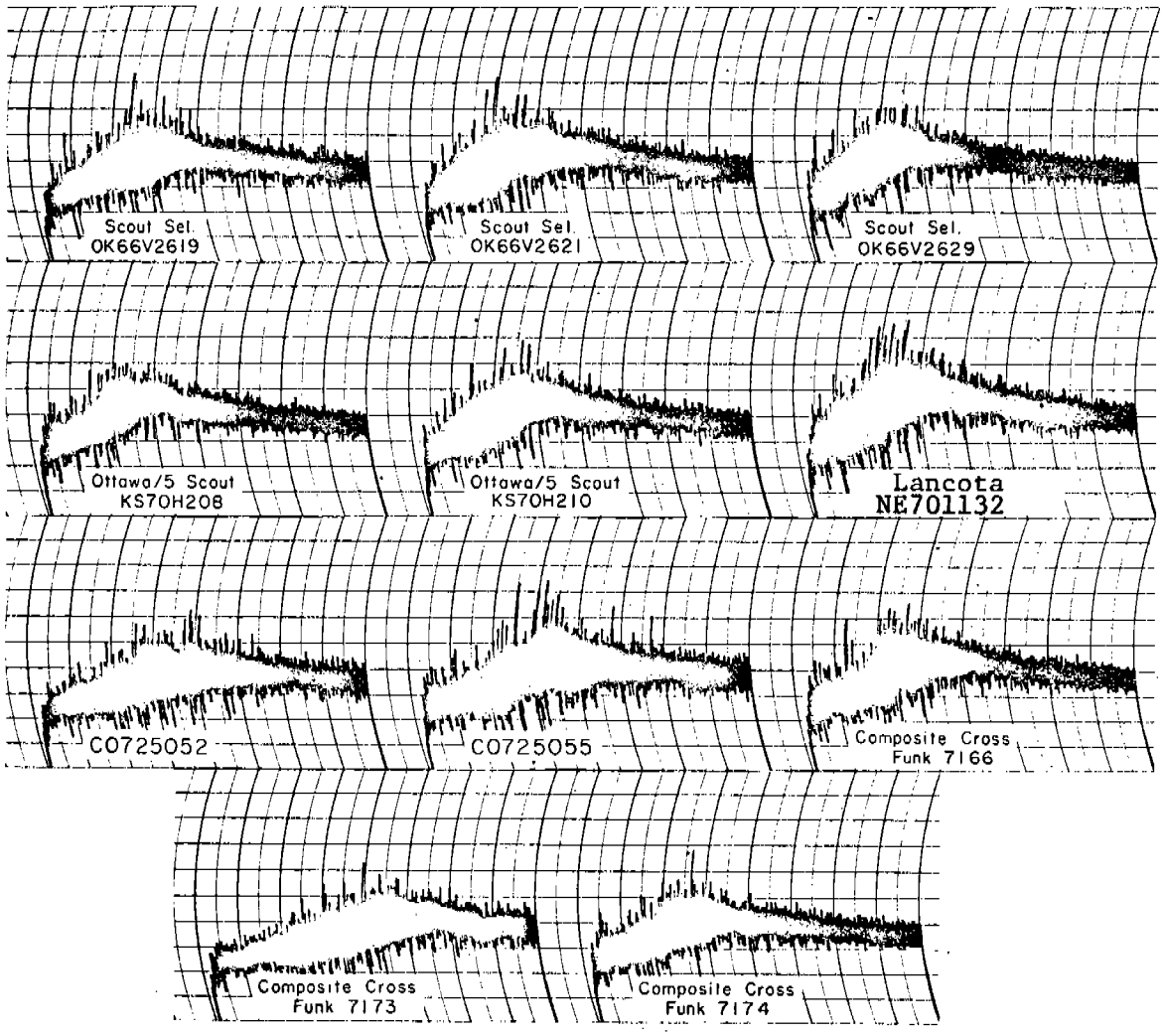


Fig. 2. Mixograms (10-g.) for the Southern Regional Performance Nursery composites of hard winter wheat varieties harvested in Texas, Oklahoma, Kansas, Missouri, Nebraska, and Colorado in 1974.

76TQ-2

EXHIBIT C (additional data)

Table 7. Comparative data Lancer, Scout 66 and Lancota at Mead, Nebraska, 1975. Fifty measurements.

Trait		Lancer	Scout 66	Lancota
Head length: cm.	Mean	6.15	6.83	6.74
	Range	4.8 - 7.5	5.5 - 10.0	5.5 - 8.0
Head width : mm.	Mean	9.0	7.4	8.74
	Range	8 - 10	6 - 11	5 - 10
Awn length : cm.	Mean	5.85	6.75	6.59
	Range	3 - 9	5.4 - 9.5	3.0 - 9.5
Glume length: mm.	Mean	6.88	6.76	6.80
	Range	6 - 8	5 - 9	5 - 9
Glume width: mm.	Mean	3.26	3.12	3.50
	Range	2 - 4	2 - 5	2 - 5
Beak length: mm.	Mean	4.04	2.64	3.20
	Range	2 - 7	1 - 6	2 - 7

76 TQ-2

EXHIBT C (additional data)

Table 8. Comparative kernel data for three winter wheats grown in Nebraska in 1975.

Trait	Scout 66	Lancer	Lancota
1000-kernel wt., grams. (13 locations)	32.7	27.8	31.4
Kernel length, mm. (10 locations)	6.52	6.07	6.44
Kernel width, mm. (10 locations)	2.70	2.67	2.69
Grain protein content, percent (13 locations)	13.0	12.9	13.7

76TQ-2

EXHIBIT D

The botanical description of Lancota is as follows: Plant winter habit, medium maturity, blue-green foliage, waxy bloom, leaves moderately wide; height mid-tall; stem white to yellow, mid-strong; spike awned, oblong to tapering, mid-dense, erect; glumes glabrous, white to yellow, short in length and medium wide; beak moderately short and acuminate; awns white 5-9 cm. long; kernel red, medium hard, moderately long and elliptical; germ mid-sized; crease shallow, cheeks rounded; brush short to medium, not collared.

76TQ002

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
14th and Independence Avenue, Rm. 1634

WASHINGTON, D.C. 20250

April 11, 1977

PLANT VARIETY PROTECTION OFFICE

Gentlemen:

Subject: Application No. 76TQ002
Variety and Kind - 'Lancota' - Wheat

As provided in section 83(a) of the Plant Variety Protection Act, 7 U.S.C. 2321, we request that the Certificate on the above variety be issued with a notation on each Certificate that the right to exclude others from selling, offering for sale, reproducing, importing or exporting the variety covered by this Certificate, or using it in producing a hybrid or different variety is waived.

It has been agreed that the certificate should be issued in the name(s) of:

Nebraska Agricultural Experiment Station

4/17/77
(Date)

Howard W. Ottoson, Dean and Director, NAES

4-20-77
(Date)

M. A. Massengale, Vice Chancellor for Agriculture and Natural Resources

For the Board of Regents -
University of Nebraska

4/21/77
(Date)

Miles Tommeraasen, Vice Chancellor for Business and Finance

00022

leaf blotch. Lancota is somewhat less winterhardy than Lancer and, therefore, production should be restricted to cropping districts where its winterhardiness is adequate.

In Lancota, a hard red winter wheat, above-average grain protein content is combined with excellent milling and baking qualities. It is medium in dough mixing time, has good mixing tolerance and excellent loaf volume potential. Production of Lancota should increase the average grain protein level of the wheat being produced.

Breeder seed of Lancota will be maintained by the Nebraska Agricultural Experiment Station, Lincoln, Nebraska. Limited amounts of foundation seed will be available from the Foundation Seed Divisions, University of Nebraska-Lincoln, Lincoln, Nebraska 68503, South Dakota State University, Brookings, South Dakota 57006, Texas A & M University, College Station, Texas 77843, and Kansas State University, Manhattan, Kansas 66506. The U. S. Department of Agriculture will have no seed for distribution.

Lancota will be submitted for registration and variety protection under P. L. 91-577 with the certification option.

The proposed release date is June 15, 1975. Each agency involved in this agreement may make news releases it considers appropriate on or after the release date.

Director
Nebraska Agricultural Experiment Station

MAR 20 1975
Date

Director
South Dakota Agricultural Experiment Station

4/14/75
Date

Director
Texas Agricultural Experiment Station

4/29/75
Date

Administrator
United States Department of Agriculture
Agricultural Research Service
Washington, D. C.

RECEIVED
JUL 8 1970
AMS, GRAIN DIV.
PVTO

5/2/75
Date

Director
Kansas Agricultural Experiment Station

6/11/75
Date

00005

FORM GR-470-6 (REVERSE) 76TQ002

11. HEAD:

[3] Density: 1 = LAX 2 = DENSE 3 = Middense

[4] Shape: 1 = TAPERING 2 = STRAP 3 = CLAVATE 4 = OTHER (Specify) oblong to tapering

[4] Awnedness: 1 = AWNLESS 2 = APICALLY AWNLETED 3 = AWNLETED 4 = AWNED

[1] Color at maturity: 1 = WHITE 2 = YELLOW 3 = PINK 4 = RED 5 = BROWN 6 = BLACK 7 = OTHER (Specify): _____

[0][7] CM. LENGTH See attachment, Table 7 [0][9] MM. WIDTH

12. GLUMES AT MATURITY:

[1] Length: 1 = SHORT (CA. 7 mm.) 2 = MEDIUM (CA. 8 mm.) 3 = LONG (CA. 9 mm.)

[2] Width: 1 = NARROW (CA. 3 mm.) 2 = MEDIUM (CA. 3.5 mm.) 3 = WIDE (CA. 4 mm.)

1 1 = glabrous 2 = pubescent

[4] Shoulder shape: 1 = WANTING 2 = OBLIQUE 3 = ROUNDED 4 = SQUARE 5 = ELEVATED 6 = APICULATE (but slant downward)

[3] Beak: 1 = OBTUSE 2 = ACUTE 3 = ACUMINATE

13. COLEOPTILE COLOR:

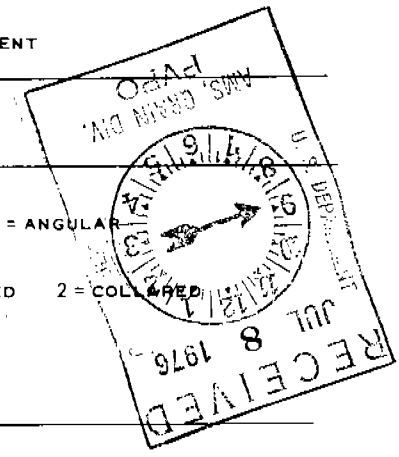
[1] 1 = WHITE 2 = RED 3 = PURPLE

14. SEEDLING ANTHOCYANIN:

[1] 1 = ABSENT 2 = PRESENT

15. JUVENILE PLANT GROWTH HABIT:

[1] 1 = PROSTRATE 2 = SEMI-ERECT 3 = ERECT



16. SEED:

[3] Shape: 1 = OVATE 2 = OVAL 3 = ELLIPTICAL

[1] Cheek: 1 = ROUNDED 2 = ANGULAR

[1] Brush: 1 = SHORT 2 = MEDIUM 3 = LONG

[1] Brush: 1 = NOT COLLARED 2 = COLLARED

[5] Phenol reaction (See instructions): 1 = IVORY 2 = FAWN 3 = LT. BROWN 4 = BROWN 5 = BLACK

[3] Color: 1 = WHITE 2 = AMBER 3 = RED 4 = PURPLE 5 = OTHER (Specify) _____

[0][6] MM. LENGTH [0][3] MM. WIDTH [3][1] GM. PER 100 SEEDS See attachment Table 8

17. SEED CREASE: 4 = V. similar to Scout (narrow)

[4] Width: 1 = 60% OR LESS OF KERNEL 'WINOKA' 2 = 80% OR LESS OF KERNEL 'CHRIS' 3 = NEARLY AS WIDE AS KERNEL 'LEMHI'

[4] Depth: 1 = 20% OR LESS OF KERNEL 'SCOUT' 2 = 35% OR LESS OF KERNEL 'CHRIS' 3 = 50% OR LESS OF KERNEL 'LEMHI' 4 = V. similar to Scout (shallow to mid-deep)

18. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

Mod Res STEM RUST (Races) currently prevalent races

Mod res LEAF RUST (Races) currently prevalent races

[0] STRIPE RUST (Races) _____ [0] LOOSE SMUT

[0] POWDERY MILDEW [0] BUNT

[ ] OTHER (Specify) _____

19. INSECT: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

[0] SAWFLY [0] APHID (Bydv.) [0] GREEN BUG [0] CEREAL LEAF BEETLE

[ ] OTHER (Specify) _____ HESSIAN FLY RACES: [ ] GP [ ] A [ ] B [ ] C [ ] D [ ] E [ ] F [ ] G Susceptible

20. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant tillering	Lancer	Seed size	Scout
Leaf size	HiPlains	Seed shape	Scout
Leaf color	Lancer	Coleoptile elongation	Lancer
Leaf carriage	Lancer	Seedling pigmentation	Lancer

INSTRUCTIONS

GENERAL: The following publications may be used as a reference aid for the standardization of terms and procedures for completing this form:

(a) L.W. Briggle and L. P. Reitz, 1963, Classification of Triticum Species and Wheat Varieties Grown in the United States, Technical Bulletin 1278, United States Department of Agriculture.

(b) W.E. Walls, 1965, A Standardized Phenol Method for Testing Wheat Seeds for Varietal Purity, contribution No. 28 to the handbook of seed testing prepared by the Association of Official Seed Analysts. (See attachment.)

LEAF COLOR: Nickerson's or any recognized color fan should be used to determine the leaf color of the described variety.